COHEN (J. SOLIS)

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APSITHYRIA.

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Several years ago (The Medical and Surgical Reporter, May 1, 1875,) I reported a series of cases of *apsithyria* or inability to whisper, associated with paralytic aphonia or loss of voice. Some additional examples of the double infirmity have come under my observation since that period. One of these was attended with so much difficulty in management, and gives withal such striking evidence of the value of persistence in treatment, that I am tempted to record the circumstances of its origin and progress, at some length.

A farmer's daughter, unmarried, forty years of age, who had at one time taught in a country school, was brought to me November 22, 1881, by her physician. For fifteen months her voice and whispering power had been absolutely lost, the double infirmity compelling resort to tablet and pencil as her only means of personal communication.

In February, 1879, she had been the subject of pneumonia. Recovery left her aphonic. For about eighteen months she had remained able to talk in a whisper; but since that time, "word of mouth" had been for her an impossibility.

Submitted to the most rigorous tests, the apsithyria proved to be real. It had no analogy with the simulated infirmity attending some cases of so-dubbed hysterical aphonia. Laryngoscopic inspection revealed paralysis of the arytenoid muscle and of both lateral crico-arytenoids. The larynx and pharynx were pallid.

The lady was debilitated, dispirited, languid, and hypersensitive. Stomachic digestion was good, but appetite was lost. Intestinal digestion was imperfect, and decomposition of its products frequent. Insomnia was constant. The patient asserted that this condition had been of some two years' duration, and that for more than a year she had not known what a sound sleep was. To complicate matters still further, the unfortunate lady was so deaf that she could not distinguish words uttered in unfamiliar tones, even though they were shouted close to her ear. Hence, for a long time, I had to depend upon the voice of her sister as my source of communication with her. Occasionally even this resource failed, and there was no communication save by the pencil. So many directions have to be given patients during laryngoscopic examinations, and still more so during intra-laryngeal manipulations, that treatment of the diseased larynges of the deaf is far from being a pastime. I begged the lady to write out her own medical history for me up to the period of our first interview, and from the notes she gave me I cull the following data:

From the age of one year to eighteen, she had suffered from asthma, to which she attributed her deafness, which began in her tenth year and increased with every cold she took. She probably suffered with a chronic rhino-pharyngitis, which gradually extended into the middle ear, and also excited asthmatic paroxysms of reflex origin from occlusions in the nasal passages.

Fifteen years before her visit to me (1865) she had an attack of typhoid pneumonia which left her invalided for seven months. Indeed, she never fully recovered, having had impaired respiratory power, occasional hemorrhages, and delicate lungs, ever since.

Five years later, during an attack of remittent fever, her head was kept bathed with ice water during several days and nights. After recovery, the hearing was much worse, and continued failing until at the end of about two years it had reached its present deplorable condition. Thirty-three months before applying to me (February, 1879), while visiting relatives in the Northwest, she was, after a ride in the cold wind, seized with such intense dyspnœa and severe pain in the chest (mediastinal pleuro-pneumonitis?) that her physician remained by her side for four hours before he deemed it prudent to withdraw, having despaired of her recovery for three hours. Every inspiration seemed a gasp for life, and the pain was sharp as though daggers were being plunged into the chest. The abdomen and extremities were cold and numb. The recumbent position could not be maintained. For three hours she had to sit propped up in an arm-chair; and for three days thereafter she remained sitting upright in bed with supports to her back, breathing being absolutely impossible in a reclining posture. Confinement to bed continued two weeks. During the first week of illness, the voice remained natural in tone, but very faint. It gradually waned to a laryngeal whisper, as had been usual with her, for a time, after every illness. Hence the aphonia excited no alarm. It was probably but one expression of general muscular debility.

Several weeks elapsed before strength began to be regained. During this period, the loss of voice was attributed to general nervous exhaustion,

and recovery was predicted as she should increase in vigor. Six more weeks passed with returning health, and still the voice continued to be a mere whisper. After careful examination of the throat at this time, the physician announced that the aphonia was probably irremediable, but suggested that my advice should be sought.

The patient returned to her home in Pennsylvania during the following June. Her own physician encouraged her with hopes of recovery of voice, and put her upon general tonic treatment. For months the voice showed little change. At times it would be an audible whisper; again, barely distinguishable. Every attempt at conversation induced weariness and muscular fatigue.

A second attack of thoracic pain and dyspnœa occurred about one year after the attack described. It was much less severe, but it left her with so weak a voice that she could barely make herself heard; and often she could not be understood.

She now consulted the gentleman who ultimately transferred her to my care. She remained under his immediate attention for five weeks, during which applications of electricity (induced current) were made daily to the exterior of the throat. The voice became stronger under these manipulations, but even then, it was but a low and feeble whisper. Efforts to speak were so exhausting that they were made under compulsion only. She was then advised to continue the electric treatment at home during the summer, and to visit Philadelphia when the weather became cool enough, for the purpse of consulting myself. Her sensitiveness in approaching strangers, due to her hardness of hearing and her difficulty in talking, long deterred her from acting on this advice.

Meanwhile, she did not continue the applications of electricity; and within two weeks from their cessation, her voice failed her utterly, and she could no longer be understood. This failure seems to have been the first manifestation of aphthyria.

At this time (August, 1880), the patient began the use of slate and pencil, which she had not been able to discontinue.

In October, the applications of electricity were resumed, and continued for many months, but without the slightest benefit to the voice. The lungs, however, seemed to improve in respiratory power and endurance under the electricity, and hemorrhages became much less frequent. Since her first attack of painful respiration, she could bear neither wind nor cold, and for the last two years, the throat had been more or less sore continuously—so sore at times as to prevent deglutition. For fifteen months it had been better under frequent treatment by sprays; and more comfortable for the last three months than at any other portion of the two years.

This history was not a very promising one for treatment, nor was the patient a favorable subject. Nevertheless, basing my opinion chiefly on the integrity of the gastric function, which had been fairly maintained, I gave a cheerful though guarded prognosis, and predicted return of both whisper and voice as the reward of persistent, while necessarily protracted treatment. I had the good fortune to secure the thorough confidence of my patient; and this was not withdrawn, though disappointments and relapses were frequent.

The plan adopted comprised the internal administration of sulphate of strychnine in gradually-increasing doses, and topical applications of currents of electricity daily to the paralyzed muscles of the larynx, to some of the voluntary muscles of respiration, to the orbicular muscles of articulation, and to the region traversed by the pneumogastric nerves in the neck—the strychnine being given in aqueous solution, one grain to the ounce, commencing with a dose of ten drops thrice a day for the first day, eleven drops for the second, twelve for the third, with continued daily increase of the same quantity until some indication of its constitutional influence was manifested, when the dose was at once diminished to ten drops, with a daily increase of two drops, instead of one as before, and so on in permanent medication.

The current of the battery, just strong enough to move the muscles of my own thumb, was used for the intra-laryngeal applications, the positive electrode being held over the crico-thyroid membrane by the patient, and the negative electrode being applied under laryngoscopic inspection over the arytenoid, and the lateral crico-arytenoid muscles. A sponge the size of a silver quarter of a dollar was secured to the external electrode, and a minute fragment of sponge sewed to a hard rubber plate, so as to protect the pharynx, was attached to the intra-laryngeal electrode. Contact was maintained for a few seconds at each introduction of the electrode, and the current closed and opened at intervals of about one second by means of a spring connection on the handle of the intra-laryngeal electrode. The induced current was applied to the muscles of the mouth and of the thorax, in the customary manner. The continuous battery current, very weak, was applied over the course of the cervical portion of the pneu-

mogastric, the positive electrode to the side of the uppermost vertebra, and the negative by means of a long, narrow electrode, in front of the sterno-cleido-mastoid muscle of the side corresponding. These latter applications were endured but for a few seconds, and were promptly discontinued, by sliding the positive electrode to a more distant point before removal, on the approach of dizziness. The electric routine was not carried out in full at each interview; the patient could not have borne the protracted sitting. Choice was made of one or two of the four series of applications, as appeared most desirable at the moment. Many times it became necessary to intermit all applications for several days.

During this treatment, it occasionally became necessary to prescribe for some temporary complication, as an attack of pleurisy, an attack of intense and persistent cephalalgia, or something else; but strychnine and electricity remained the therapeutic agents upon which dependence was placed.

In some three weeks, the ability to whisper became restored to such a degree that the tablets were interdicted and given away. There has been no total loss of whisper since.

At the end of about two months the voice began to improve; but again and again, though audible at the close of an electric manipulation, it would be lost before the patient reached her apartments, but three or four minutes' walk from my house. The lady was so rejoiced at recovering her ability to whisper, that she would have remained content without her voice; but she yielded to my solicitation to give me every chance I wanted before abandoning the treatment. At the end of four months the voice remained good, though feeble, for several weeks; and I permitted the patient to return home, with instructions to continue the use of strychnine as she had been doing hitherto. Some three weeks later, she returned in an aphonic condition, her voice having failed by reason of over-taxation in social amenities. There was again a failure in the contractions of the lateral crico-arytenoid muscles, and insufficiency in the contraction of the arytenoid proper. Intra-laryngeal applications of electricity, as before, restored the voice; and I detained her for an entire month, during which her voice continued to improve, when she returned home with a voice much stronger than before.

During last spring paresis of the laryngeal muscles again occurred, and the patient presented herself voiceless in April. Prompt recovery followed electric treatment as before, and the voice has remained at command ever since. The patient resumes the strychnine occasionally, under professional advice.

A recent letter informs me, with profuse acknowledgments of gratitude, that sleep and appetite remain good, and powers of endurance greater than for many years. Pluck in the patient, and perseverance with strychnine and electricity have, save for the permanent impairment of hearing, restored a valuable individual to the society of family and friends, and enabled her to resume the duties and responsibilities of a more active life.

It may be of service to those interested in the topic, to refer briefly to two of the cases reported in 1875, and state their subsequent history.

1. An unmarried lady, twenty-two years of age, came under my care April 3, 1873, with aphonia and apsithyria; the latter of ten months' duration. She was slender, anæmic, and of a phthisical habit and inheritance. The aphonia was due to bilateral paralysis of the lateral crico-arytenoid muscles, and paralysis of the arytenoid proper; the vocal bands remaining rigid in extreme abduction. Respiration was normal in frequency and in rhythm. Motion was perfect in lips and in tongue. But the ability to utilize the current of expiration in making a sound with the lips, wa in complete abeyance.

Electric intra-laryngeal applications of the induced current of the second coil, soon overcame the paresis of the arytenoid muscle; but currents of induction and currents of the battery, failed utterly for a long time to overcome the paresis of the lateral crico-arytenoids. Thus the aphonia remained unrelieved after one year's treatment, at the time the case was reported. During this entire period tonics and aperients were systematically employed, with marked improvement in the general health. Until this improvement had been well advanced, all electric treatment directed to the external muscles of respiration and to the course of the nerves of respiration, failed to restore the ability to whisper. The apsithyria was finally conquered, however, about a year and a half before the case was reported, under the influence of continuous currents of the battery, passed from the nape of the neck to the two cervical regions and the top of the sternum, for from two to three minutes daily, and persisted in for several continuous weeks.

From that time to the present, the power of whispering has not been lost, though periods of great weakness of whisper have intervened. This lady has been an occasional visitant at my office, sometimes for a few consecutive days, at in

tervals varying from a few months to as long as two years. There has been almost continuous necessity for tonic treatment, which has doubtless been influential in arresting the progress of her phthisis, and saving her thus far from the fate of her consumptive relatives. During one of her visits, prolonged for the purpose, in June, 1875, electricity was again applied daily to the lateral crico-arytenoid muscles, with satisfactory restoration of voice; but she has been compelled to return to me aphonic from time to time, at the irregular intervals above indicated, for electric treatment of the paretic muscles. A few applications, sometimes but one, soon restore the voice for the time being, and she goes on for an indefinite period satisfactorily. She appears to lose the voice by allowing herself to run down by omitting her tonic constitutional treatment. At every loss of voice she is placed under the influence of strychnine, and she has consumed a large amount of that drug during more than ten years that she has been under my observation. She has never become robust, but has almost always remained able to continue at her employment of dress-making, though when I last saw her, September 20, 1883, she was still sparer in habit than at our first interview, April 3, 1873; and physical exploration of the thorax gave evidence of consolidation at both apices, and of a cavity in the lower portion of the left upper lobe, anteriorly.

2. This was a rosy Western maiden, twenty years of age, and brought up on the plains. She came to me October 17, 1874; aphonia and apsithyria were complete; the aphonia was of a year's duration, and had followed a mild laryngo-bronchitis; occasional momentary production of voice had occurred under emotion, but nothing further. On laryngoscopic inspection and application of the electric test, the aphonia was seen to be due to bilateral paralysis of the thyro-arytenoid muscles, with paresis of the arytenoid proper, and of both lateral crico-arytenoids. The treatment pursued consisted in persistent administration of strychnine, and applications of electricity. A few applications of the interrupted current of the battery overcame the paresis of the arytenoid and lateral crico-arytenoids; but the thyro-arytenoids remained uninfluenced at the end of two months' treatment, and the aphonia continued. All electric treatment to the muscles of respiration and along the course of the pneumogastrics failed to impress the apsithyria.

The lady passed the winter in Florida with great advantage to her general health, but returned to the West without voice and without whisper.

I have not seen her since, but have been in occasional correspondence with her physician and herself. Out-door exercise, tonics, and occasional resumption of electric excitations, comprised the treatment. During a horseback excursion of several days, the voice and whisper became restored, as gleefully communicated to me by the delighted patient; and for aught I have heard to the contrary, the recovery has remained permanent.

As remarked in my former communication (May 1, 1875), apsithyria is usually manifested in females. I there recorded its appearance, treatment, and cure, in a male religious fanatic. I heard of this man indirectly for a year or two, and there had been no return of the difficulty. I have no knowledge of his subsequent history. This case was strongly one of emotional, so-called hysterical origin, so far as the term hysterical is applicable to the male subject. I have since seen but one case in a male. In that instance the patient was not at all hysterical. He had been practicing dentistry for a number of years in the West, and had come to Philadelphia to attend a dental college. As I remember him, for I cannot place my hand on my memorandum of his case, he was some thirty odd years of age, stout, well-nourished, not all excitable, and in general good health. The apsithyria was positive; the aphonia was due to paresis of the arytenoid muscle. A highly favorable prognosis was given, and a course of tonic and electric treatment recommended. I learned subsequently from the late Prof. Buckingham, who had brought the man to me in consultation, that he had recovered both whisper and voice.

In the instances narrated, and in all others that I have seen, the ability to whisper was last lost and first regained, as would be naturally expected.

The aphonia with which apsithyria becomes associated is always manifested as a functional paresis, whatever may have been its origin. At least it has not been myopathic in any instance, the features of which I can recall. The seat of the phonic paralysis can be inferred from observing the contour of the glottis on laryngoscopic inspection, and from observing the effect of electric excitation of the quiescent muscles. The apsithyria is apparently paretic too, but where then is the seat of the paresis? Can it be in the muscle of the diaphragm? It is not in the other muscles of involuntary respiration, for their functions in many instances exhibit no evidence of impairment. It is not in the muscles of the tongue and lips, for voluntary control over these muscles is sufficiently well maintained. Voluntary expiration can usually be effected, but the expiratory current cannot be emitted with a force sufficient to make a sound.

To adopt the language of Professor Paget, of London, perhaps the patients "cannot will" to whisper. But they do seem to make the effort consciously and conscientiously, and they fail.

The only serious difficulty essential to the condition of apsithyria is the forced communication by pencil or by signs. This is troublesome and annoying. It often subjects the patients to hearing unpleasant remarks, based upon the opinions of bystanders who deem them deaf as well as dumb.

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